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## BRIEFER ARTICLES.

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### AN HERMAPHRODITE GAMETOPHORE IN PREISSIA COMMUTATA.<sup>1</sup>

(WITH ONE FIGURE)

THE reproductive organs of most of the Marchantiaceæ are borne on specialized receptacles known as gametophores. So far as I can learn there has been no instance recorded of the two sex organs being found on the same gametophore. In a recent study of *Preissia*, however, I discovered this phenomenon.

The normal archegoniophore of *Preissia* is hemispherical in shape, the archegonia being situated on the lower surface. The tissue adjacent to the archegonia is compact and is made up of small cells rich in protoplasm. The tissue in the upper part, however, is much looser and the cells are larger. The antheridiophore is discoid, with the upper surface slightly concave, in which the antheridia are sunk. The tissue, particularly that surrounding the antheridia, is much looser than that of the female receptacle, and the cells are somewhat larger.

The shape of the hermaphrodite gametophore from which the accompanying illustration was made clearly indicates that it is primarily an archegoniophore, but it is modified to adapt it to its peculiar conditions. The upper part is more strongly developed than normally, and is irregular in form. The archegoniophore at maturity has a long stalk, but as the material from which this section was made was put up in the fall the stalk had not yet elongated. On the under surface is shown a portion of one archegonium, the neck having been cut off in sectioning. In the upper portion of the gametophore are two well-developed antheridia, corresponding almost exactly in shape and size to those occurring in normal plants. Their structure is also the same. Their position in the gametophore is very similar to that which they

<sup>1</sup> Miss Townsend discovered this interesting case of an hermaphrodite gametophore while engaged in the regular course of advanced work in comparative morphology, and it was at my suggestion that she has prepared it for publication.—GEO. F. ATKINSON.

occupy in the normal antheridiophore. The tissue surrounding them resembles that of the latter receptacle, while the tissue of the lower portion is that of the ordinary archegoniophore.

There is a question whether this is merely an abnormal condition or whether it is a reversion to an earlier type. In the Ricciaceæ the two organs may either be produced together or, as is often the case with *Riccia glauca* and *Riccia hirta*, they may be found on the same part of

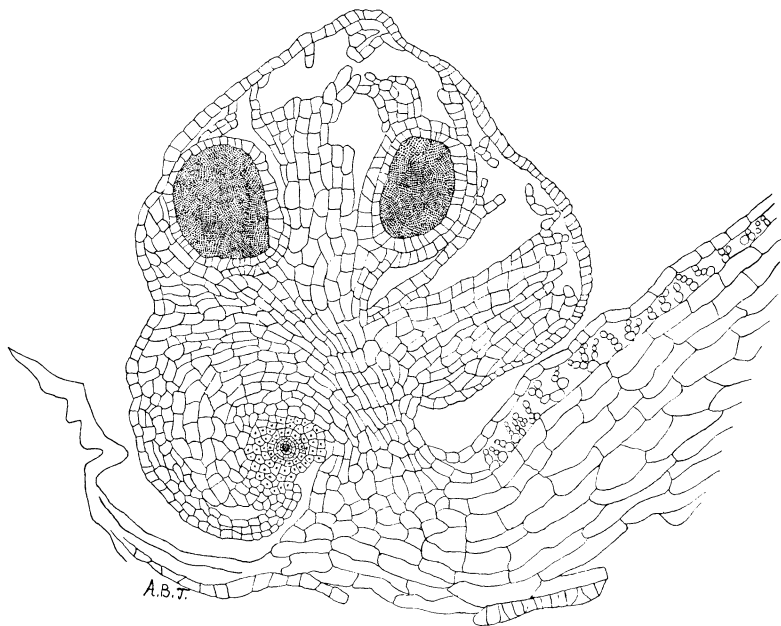


FIG. 1.—Section of hermaphrodite gametophore of *Preissia commutata*.

the thallus, but occupying different areas, one organ being produced for a time and then the other. It is possible that in the evolution of the gametophore the tissue surrounding the reproductive organs may have become differentiated to form a receptacle, and, as the two organs were situated near each other, they may at first have been borne on the same gametophore. As the reproductive organs became more highly developed and specialized, the gametophore might naturally have advanced in development and specialization, and in time have come to produce but one kind of organ. A still further development might then have produced two distinct gametophores, each adapted in form and structure

to the functions of the organ borne on it. A suggestive case in the algæ occurs in *Vaucheria geminata* and *V. terrestris*, where an unspecialized branch, or gametophore, bears both antheridia and oogonia. It is possible that the original type of gametophore was hermaphrodite. In *Vaucheria terrestris* there are occasional branches which bear but one organ, showing that a unisexual gametophore might be developed from the hermaphroditic.—ANNE B. TOWNSEND, *Cornell University*.

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### SOME PLANTS RECENTLY INTRODUCED INTO FLORIDA.

TWO YEARS since<sup>a</sup> I called attention to some South American species found by Mr. A. H. Curtiss in ballast or about streets in various parts of Florida. A package of specimens recently sent for study by Mr. Curtiss contains several South American and southwestern species apparently not before reported from Florida, most of them unrecorded from the North American continent. The plants from Pensacola were collected, in the words of Mr. Curtiss, "from lands lying inside the wharves, such as presumably consist more or less of ballast earth." This fact suggests that *Jussiaea suffruticosa*, and *Hydrocotyle bonariensis*, formerly reported from Pensacola, are perhaps introductions to be classed with *Alternanthera pungens*, *Solanum elæagnifolium*, and *Anthemis mixta* (recorded in the article referred to), and that they have reached the Florida coast through the same channel as the following species:

*IPOMŒA PALMATA* Forsk. Fl. Ægypt. Arab. 43.—This Egyptian plant has been recently introduced into Florida where it has made itself at home, growing vigorously in waste ground about St. Augustine, Jacksonville, and Pensacola (no. 6496). At Pensacola Mr. Curtiss states "I found it growing rampant over bushes on the bay shore and fruiting freely."

*SOLANUM GLAUCUM* Dunal in DC. Prodr. 13<sup>1</sup>: 100.—A Brazilian species which was first noted at Pensacola in 1897 when it was not abundant, though now thoroughly at home (no. 6530).

*SALPICHRŒA RHOMBOIDEA* Miers in Hook. Lond. Jour. Bot. 4: 326. 1845.—This delicate solanaceous plant, native of Argentine Republic, was recently collected by Mr. Curtiss (Oct. 3, 1899) in low ground at Jacksonville (no. 6542).

<sup>a</sup> BOT. GAZ. 24: 433-436. 1897.